REMARKS/ARGUMENTS

In view of the foregoing amendments and the following remarks, applicant respectfully submits that the pending claims are not rendered obvious under 35 U.S.C. § 103. Accordingly, it is believed that this application is in condition for allowance. **If, however, the Examiner believes that there are any unresolved issues, or believes that some or all of the claims are not in condition for allowance, applicant respectfully requests that the Examiner contact the undersigned to schedule a telephone Examiner Interview before any further actions on the merits**.

Applicant will now address each of the issues raised in the outstanding Office Action.

Objections

Claims 53-55 are objected to due to a minor informality. Each of these claims has been amended to change "the first portion" to "a first portion" based on the Examiner's helpful suggestion. Accordingly, these objections should be withdrawn.

Claims 40, 41, 53-55, 60 and 61 were found to include allowable subject matter, but were objected to as depending from a rejected base claim. Claims 40, 54 and 55 have been rewritten in independent form to include the features of the rejected base claim and any intervening claims. Accordingly, these claims are now in condition for allowance. Since claim 41 depends from claim 40, it is also in condition for allowance.

Claim 53 remains dependent from claim 5 and each of claims 60 and 61 remains dependent from claim 29. Since claims 5 and 29, as amended, are in condition for allowance for the reasons discussed below, claims 53, 60 and 61 are also in condition for allowance.

Rejections under 35 U.S.C. § 103

Claims 1-17, 20-35, 37-39, 57 and 63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,721,269 ("the Cao patent") in view of U.S. Patent No. 6,850,524 ("the Troxel patent") and U.S. Patent No. 6,538,416 ("the Hahne patent"). Applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Before addressing at least some of the patentable features of various claims, applicant will first introduce each of the cited references.

The Cao Patent

The Cao patent concerns predetermining primary and secondary (for backup) label-switched paths (LSPs). The source (or ingress) router determines the LSPs and defines nodes in explicit routes (ERs). The sink (or egress) router selects one of the determined LSPs to use, as well as a secondary LSP. Nodes can determine other nodes within an abstract router (a representation of a group of routers) if the node specified in the ER path is a "loose node". The Cao patent does not teach a message including a path determination constraint expressed as an executable instruction.

The Troxel Patent

The Troxel patent concerns sending predictions
(e.g., with respect to a peer, a node, or an interface)
in messages. These predictions can be extracted. Then,
active states may be determined based on the predictions.
Finally, a routing table may be generated using the
active states of the entities. (See column 1, line
53-column 2, line 20.) The cited sections of columns 3
and 4 of the Troxel patent simply discuss a hierarchical
network, and components of an exemplary node in such a
network.

Rather than simply providing scalars or simple
values of a current link state as is the case with
traditional OSPF, the Troxel patent may use a time-based
function. (See, e.g., column 4, lines 42-57.) The link
state may include parameters such as signal strength,
link quality, and speed. (See, e.g., column 7, lines
10-13.)

Note that the Troxel patent apparently concerns
route determination, not path determination. Further,
the parameters carried are not constraints to be used in
determining a path. Rather they are predicted states of
network elements. For example, the Troxel patent might
predict a 100 Mbps link will only be able to operate at
50 Mbps. On the other hand, one example of a path
determination constraint might require all links in a
path to operate at 10 Mbps. As these examples
illustrate, the Troxel patent concerns the state of
network elements, while the present invention concerns
required (or desired) attributes of a path to be
determined.

The Hahne Patent

The Hahne patent discusses a reservation protocol
for use over a number of autonomous systems (AS's).
Stateless probe messages are processed by border routers.
A probe message may include a source ID, a destination
network, a reservation level, and path routing
information (e.g., routers that are part of the path thus
far). The border routers determine and reserve pieces of
the path within their respective AS. The probe message
collects routing information along the path -- the
intermediate routers do not store any information (about
the path). If an AS cannot, or will not accommodate the
reservation, a rejection message is returned to the
source router.

Once the probe message reaches the sink (or egress)
router, that router sends a graft message back upstream
to the leaf (or ingress) router to establish the path.

The Hahne patent does not teach a message including
a path determination constraint expressed as an
executable instruction.

Having introduced the cited art, applicant will now
discuss various patentable features of the claimed
invention.

Claims 2, 3, 5, 6, 8-17, 20-35, 37-39, 53, 57 and 63

Claim 1 has been canceled. Formerly dependent claim
11 has been rewritten in independent form to include the
recitations of canceled claim 1. It claims a method for
processing a message carrying at least one network path
determination constraint which is an executable
instruction. Specifically, claim 11 recites:

A method for processing, by a node of a network, a message carrying at least one network path determination constraint, the method comprising:

a) performing a constraint-based path determination to a next node selected from a group of nodes consisting of

(i) an area border node,

(ii) an autonomous system gateway node,

(iii) a node that can process one of the at least one network path determination constraint carried by the message which the present node cannot, or will not, evaluate,

(iv) a specified loose-hop node, and

(v) a node to which constraint processing is delegated,

to generate a partial path; and

b) forwarding the message carrying the at least one network path determination constraint to an adjacent downstream node on the partial path, or to a delegated node that is able to carry out the path determination,

wherein each of the at least one network path determination constraint is an executable instruction. [Emphasis added.]

Signaling path constraints in this way is advantageous since it permits nodes (e.g., routers) to provide an extensible, interoperable way to communicate constraints. (See, e.g., page 14, lines 16 and 17, and page 43, lines 1-3 of the present application.)

The cited references neither teach, nor suggest such a feature. Accordingly, claim 11 is not rendered obvious

28

by the Cao, Troxel and Hahne patents for at least this reason. Since claims 2, 3 and 8-10 and 12-17 each depend, either directly or indirectly, from claim 11, they are similarly allowable.

Independent claim 5, 6 and 37-39 as amended, are similarly allowable. Since claims 53 and 63 depend from claims 5 and 6, respectively, these claims are also allowable.

Independent claims 20, 29 and 34 are similarly allowable. The Examiner seems to contend that these are suggested by column 11, lines 15-40 of the Cao patent which discuss the use of software and/or hardware logic. (See Paper No. 20050213, page 5.) However, even if some path restriction can be operated on by hardware logic and/or software, this neither teaches, nor suggests, messages used to communicate path constraints between nodes of a communications network, where those path constraints are expressed as executable instructions in the messages. Accordingly, independent claims 20, 29 and 34 are not rendered obvious by the Cao, Troxel and Hahne patents for at least this reason. Since claims 21-28 depend, either directly or indirectly, from claim 20, since claims 30-33 depend, either directly or indirectly, from claim 29, and since claims 35 and 57 depend, either directly or indirectly from claim 34, these claims are similarly allowable.

Claim 4

Claim 4 has been rewritten in independent form to include the recitations of canceled claim 1. This claim is not rendered obvious by the Cao, Troxel and Hahne patents because these patents neither teach, nor suggest,

a message carrying at least two network path determination constraints selected from the group of constraints listed in claim 4. Accordingly, applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection.

Claim 7

Claim 7 has been rewritten in independent form to include the recitations of canceled claim 1. This claim is not rendered obvious by the Cao, Troxel and Hahne patents because these patents neither teach, nor suggest, a message carrying a network path determination constraint that includes a constraint related to a node; specifically a node type, minimum node throughput, node quality of service support, or a node queuing type. Accordingly, applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection.

The Proposed Combination and Modification of the Cao, Troxel and Hahne Patents

Applicant respectfully submits that one skilled in the art would not have been motivated to make the modifications and combinations of the Cao, Troxel and Hahne patents proposed by the Examiner. First, although the Cao and Hahne patents concern establishing or selecting a path, the Troxel patent concerns predicting network state information used in determining a route. Further, and more importantly, predicting a state of a network element such as a link neither teaches, nor suggests, communicating one or more constraints to be used when determining a path. Therefore, there is no

30

suggestion to modify the Troxel patent and combine it with the Cao and Hahne patents as proposed. Accordingly, claims 2-17, 20-35, 37-39, 57 and 63 are not rendered obvious by the Cao, Troxel and Hahne patents for at least this additional reason.

New claims

New claims 71 and 72 depend from allowed claims 36 and 70, respectively, and further define present invention over the cited art. Each of new claims 73-75 depends from claim 4 and further defines the present invention over the cited art. Each of new claims 76-78 depends from claim 7 and further defines the present invention over the cited art.

Conclusion

In view of the foregoing amendments and remarks, applicant respectfully submits that the pending claims are in condition for allowance. Accordingly, applicant requests that the Examiner pass this application to issue.

Respectfully submitted,

July 15, 2005
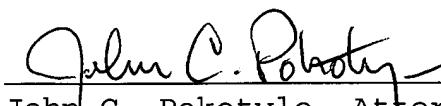
John C. Pokotylo, Attorney
Reg. No. 36,242
Tel.: (732) 542-9070

CERTIFICATE OF MAILING under 37 C.F.R. 1.8(a)

I hereby certify that this correspondence is being deposited on **July 15, 2005** with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

John C. Pokotylo

John C. Pokotylo

36,242

Reg. No.